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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,066	12/07/2001	John J. L. Simard	CTLIMM.21CPIC	8425

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EXAMINER

VANDERVEGT, FRANCOIS P

ART UNIT PAPER NUMBER

1644

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/026,066	Applicant(s) SIMARD ET AL.	
	Examiner F. Pierre VanderVegt	Art Unit 1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 29-36 and 38-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 29-36 and 38-57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>09262005</u> . | 6) <input type="checkbox"/> Other: _____  |

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### DETAILED ACTION

This application is a continuation of U.S. Application Serial Number 10/005,905; which is a continuation-in-part of U.S. Application Serial Number 09/561,074 and is a continuation-in-part of U.S. Application Serial Number 09/560,465 and is a continuation-in-part of U.S. Application Serial Number 09/561,572 and is a continuation-in-part of U.S. Application Serial Number 09/561,571 and is a continuation-in-part of U.S. Application Serial Number PCT/US01/13806.

Claims 6-28 and 37 have been canceled.

Claims 1-5, 29-36, and 38-57 are currently pending.

In view of Applicant's amendment filed May 31, 2005 the following ground of rejection is maintained.

#### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1-5, 29-36, and 38-57 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

It was previously stated: "The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species by actual reduction to practice, reduction to drawings, or by disclosure of relevant, identifying characteristics, i.e., structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus. (See Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001, especially page 1106 3<sup>rd</sup> column). A "representative number of species" means that the species that are adequately described are representative of the entire genus. Thus, when there is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus. MPEP 2163 II.A.3a.ii.

The claims are broadly drawn to compositions comprising T cells specific for an MHC-peptide complex comprising "housekeeping epitopes." The term "housekeeping epitopes" is not conventional in the art and is defined in the specification as an epitope that is processed by a standard proteasome but not by an immunoproteasome. Cells that contain immunoproteasomes, such as mature dendritic cells, cannot process antigens in a manner that allows the production of a housekeeping epitope. The universe of housekeeping epitopes is, therefore, quite large. The instant specification, however, has described only several housekeeping epitopes from seven cancer-related proteins. The specification fails to describe any

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structural properties that are shared between housekeeping epitopes, only that they are processed by standard proteasomes, not immunoproteasomes. Additionally, there is no disclosure of the enzymes, cofactors and/or chaperonins responsible for the differential processing of housekeeping epitopes.

In addition, the T cells of the claims are described only in terms of being able to binds a housekeeping epitope presented in the context of an MHC molecule. It is well known in the art that T cells do not recognize antigenic epitopes based upon the entire primary sequence of a peptide. Rather, T cells recognize an epitope based upon the presence of particular key anchor residues and the spatial relationship of those anchor residues to one another and the MHC binding pocket. Therefore, T cells which recognize "housekeeping" epitopes may also recognize "immuno"-epitopes. There is no disclosure in the specification on how to distinguish the T cells of the claimed composition from other T cells other than the fact that they are able to bind to epitopes produced by standard proteasomes that are not produced by immunoproteasomes. Because there is no disclosure of an actual structural difference between housekeeping epitopes and immuno-epitopes, there is no reason to believe that a T cell which binds to a discovered housekeeping epitope cannot also bind an immuno-epitope with a related set of anchor residues. The examples in the specification set forth only a method of isolating other housekeeping epitopes, not identifying T cells which bind to housekeeping epitopes but do not bind to immuno-epitopes. Adequate written description requires more than a mere statement that it is part of the invention and a reference to a potential method of isolating it. See *Fiers v. Revel*, ((CAFC, 1993) 25 USPQ 2d 1601) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, ((CAFC, 1991) 18 USPQ2d 1016).

*Vas-Cath Inc. v. Mahurkar* ((CAFC, 1991) 19 USPQ2d 1111) clearly states that "Applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed*." (See *Vas-Cath* at page 1117). The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See *Vas-Cath* at page 1116).

Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 USC 112 is severable from its enablement provision (see *Vas-Cath* at page 1115)."

Applicant's arguments filed November 3, 2005 have been fully considered but they are not persuasive.

Applicant argues that the description requirement has been met because the specification describes sufficient identifying characteristics for all housekeeping epitopes and a correlation between structure and function as well as full sequence information for at least one working example.

The claim is not drawn to a composition comprising housekeeping epitopes, per se, but to a composition comprising T cells specific for a housekeeping epitope. As defined in the specification, a housekeeping is an epitope that can be liberated by a housekeeping proteasome, but not by an immunoproteasome. This defines the source of an epitope, but not the epitope itself. The difference between the two kinds of proteasomes is the type of enzyme functional within for cleaving a protein into peptide fragments. Different enzymes recognize different sequences of amino acids for their cleavage site. However, these cleavage sites FLANK the epitope recognized and are not part of the epitope recognized by the T cell. Irrespective of whether the epitope was liberated by an enzyme from an immunoproteasome or by an enzyme from a housekeeping proteasome, the epitope recognized by the T

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cell remains the same. The cleavage sites merely constitute flanking sequences external to the sequence actually recognized and bound by the T cell in the context of MHC. The T cell is blind to the source of the peptide, binding peptides of a suitable size only on the basis of the presence and position of key anchor residues. Applicant argues that cross reactivity does not bear on the written description requirement. The Examiner disagrees with Applicant's position. The claim is drawn to the T cells, not to housekeeping proteasome or to a polypeptide comprising housekeeping epitopes. Other than the enzyme cleavage sites, there is nothing to distinguish a housekeeping epitope from an epitope processed by an immunoproteasome and, as stated, the cleavage takes place outside the epitope recognized by the T cell. The same T cell epitope peptide can be engineered to be between housekeeping proteasome cleavage sites (housekeeping-EpitopeA-housekeeping) or between immunoproteasome cleavage sites (immuno-EpitopeA-immuno) and still be recognized by the same T cell. The T cell does not make a distinction between EpitopeA from one source and EpitopeA from the other. They are both seen the same by the T cell. Accordingly, a T cell "specific" for an epitope processed in a housekeeping proteasome does not enjoy adequate written descriptive support in the instant specification because said T cell is no different from a T cell that recognizes an epitope processed by an immunoproteasome.

### *Conclusion*

2. No claim is allowed.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Pierre VanderVegt whose telephone number is (571) 272-0852. The examiner can normally be reached on M-Th 6:30-4:00 and Alternate Fridays 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (571) 272-0841. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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F. Pierre VanderVegt, Ph.D.  
Patent Examiner  
August 2, 2005

*PV*

*David A. Saunders*  
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PRIMARY EXAMINER  
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